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SUPERFUND PRELIMINARY CLOSE OUT REPORTZANESVILLE WELL FIELD SITE
ZANESVILLE, OHIO

I. INTRODUCTION †

This Preliminary Close Out Report documents the completion of construction activities for the Remedial Action at the Zanesville Well Field Site in accordance with OSWER Directive 0320.2-3C. The U.S. EPA conducted a Pre-Final inspection on March 20, 1996, and determined that the PRP's contractors have constructed the remedy in accordance with the Remedial Design (RD) Plans and specifications. All construction activities are complete at the site and it is not anticipated that any future construction will be required. Activities necessary to achieve Site completion are underway.

II SUMMARY OF SITE CONDITIONS

Site Description

The Zanesville Well Field Site is located on both sides of the Muskingum River in the center of the City of Zanesville Ohio. The Site contains the effected portion of the water well field for the City of Zanesville and the United Technologies Automotive facility (UTA) the source of the contamination. The City of Zanesville municipal well field covers approximately 72 acres and is on a narrow strip of flood plain on the east bank of the river. The city currently pumps 5.5 to 6.0 million of gallons of water per day from 10 of the uncontaminated wells in the well field. Four of the city's wells are no longer used for the water supply. Two of the wells are still contaminated and are being pumped in a remediation effort. The other two wells are no longer contaminated. These wells are no longer being pumped to prevent contamination migrating to the clean wells. The UTA facility lies on the west bank of the river directly across from the southern portion of the Zanesville Municipal Well Field. The UTA facility and grounds cover an area of approximately 28 acres between the river and Linden Avenue.

The property now occupied by UTA, has been used for manufacturing purposes since 1893, when American Encaustic Tiling Company, a ceramic products manufacturer, constructed the original buildings. The site has gone through several ownerships until in 1974 UTA acquired Essex Corporation.

Due to the long history and varied usage of the site, many details of past waste storage and disposal practices are not available. However, it has been established that during American Encaustic ownership of the site, a dug well 10 feet in diameter and 40 feet deep was installed.



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Over the years the dug well fell into disuse, and in the early 1970's the well was backfilled. Rubble from the demolition of the pump house, as well as up to 121 drums containing TCE solvent were placed inside the well.

Evidence of TCE contamination at the City of Zanesville's water supply Well Field was first observed in July, 1981, during a random spot check for volatile organic compounds (VOCs) by the U.S. EPA. At that time TCE was detected in the plant tap at the water treatment plant. Three wells in the southern end of the well field were found to be contaminated with trichloroethylene (TCE) and 1,2-dichloroethylene (DCE). In late 1981, the City of Zanesville was anonymously notified of the existence of the abandoned dug well on the UTA site which reportedly contained drums of TCE based solvents. The abandoned well is approximately 900 feet west of the river and directly across the river from the southern portion of the City well field. In July 1983 UTA installed a groundwater extraction and treatment system at the site consisting of four groundwater extraction wells and an air stripper for treatment as an Interim Remedial Measure to address impacted groundwater. At the same time UTA removed over 121 drums and contaminated debris from the old well and closed it. An initial soil vapor extraction system was later implemented in 1985 to supplement the groundwater remediation system.

In September 1983 the site was placed on the National Priorities List (NPL). In August 1988 U.S. EPA, the Ohio EPA and UTA entered into an Administrative Order by consent to perform an Remedial Investigation/Feasibility Study (RI/FS). The RI was completed in September 1990 and the FS approved in July 1991. A September 30, 1991 Record of Decision documented the remedial actions for the Zanesville Well field Site, which include the following remedial action components: fence installation, institutional controls and deed restrictions, pre-design studies, installation and operation of a ground water monitoring program for remedial action, installation and operation of a groundwater interceptor well system, installation and operation of a groundwater treatment system, installation and operation of an in situ soil vapor extraction system, and a inorganic soil remediation.

On September 4, 1992 a Consent Decree to perform the Remedial Design/Remedial Action (RD/RA) at the Site was executed between UTA and U.S. EPA. The RD Work Plan was approved on March 12, 1993. A series of Pre-Design Studies which included groundwater and soil sampling, pilot tests and contaminant transport modeling, were completed from May 1993 until November 1994. The 30% Design was submitted on February 24, 1995. Because of the extensive pre-design work and a high level of detail in the 30% design, the 60% design document was not required. Instead, the 95% design was prepared resulting in a saving of time. The Final Design Document was approved on October 18, 1995. Construction commenced on October 30, 1995.

The Inorganic soil Removal Work Plan portion of the design presented the methodology for completing the inorganic soil remediation. The remediation activities were completed in accordance with the specifications and methods outlined in the plan. The volume of soil to be excavated was estimated to be approximately 304 cubic yards. The actual volume of soil excavated to achieve the inorganic soil clean-up criteria was approximately 1,880 cubic yards. Confirmation soil samples indicated that removal of inorganic impacted soils in excess of the soil

clean-up criteria had been achieved.

The results of the "Preliminary Pre-Design Data Report for the Organic Impacted Soils Investigation" did not identify any new source area of VOCs. The only source areas identified were the Drum Storage Area and the north east corner of the main building. As a result of the this conclusion, a shallow SVE system was designed to focus on the Drum Storage Area and the northeast corner of the main building. The deep SVE system was designed to provide soil vapor extraction from area of suspected deeper zone soil impacted and to provide for the extraction of vapors produced through operations of the air sparging system. Although not required in the ROD, the PRPs proposed Air Sparging (AS) as an enhancement to the required ISVE system. An AS/SVE system was designed to remediate the organic impacted soils and groundwater. A total of 16 in-situ soil vapor extraction wells, five nested air sparging wells, 5500 linear feet of conveyance piping and the AS/SVE equipment and equipment enclosure were constructed. The AS/SVE system was completed according to the technical specifications and design drawing presented in the Final Design. Based on the results of the AS/SVE Pilot Testing, the SVE system is expected to achieve the clean-up standards specified in the ROD.

The groundwater remediation system design was based on the results of groundwater modeling, groundwater sampling and analysis, the historical performance of the Interim Groundwater Extraction and Treatment System, and the results of the AS/SVE pilot test that were performed. The four existing groundwater extraction wells were incorporated into the final groundwater remediation system. The groundwater remediation is a long term response action. The groundwater remediation system is expected to achieve the clean-up standard specified in the ROD.

III. DEMONSTRATION OF QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) FROM CLEAN UP ACTIVITIES

Activities at the site were consistent with the ROD and all work plans. A Quality Assurance Project Plan was approved on March 12, 1993 for all Pre-Design Studies. All sample collection and analytical activities were conducted in accordance with the approved QAPP. The Construction Quality Assurance Plan (CQAP) was approved on October 12, 1995. Remedial Action work was conducted with U.S. EPA oversight. All construction activities were conducted in accordance with the approved CQAP.

IV. ACTIVITIES AND SCHEDULE FOR SITE COMPLETION

The following activities will be completed or have been completed according to the schedule described bellow:

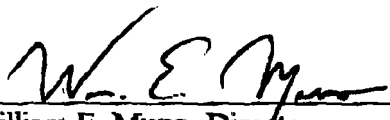
<u>TASK</u>	<u>ESTIMATED COMPLETE</u>	<u>RESPONSIBLE PARTY</u>
Final Inspection	April 24, 1996	U.S. EPA

RA Report	September 30, 1996	PRP
Long-term Monitoring Completion/Clean-up Verification	2001	PRP
Final Close out Report	2002	PRP

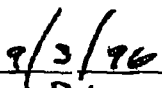
Five Year Review

Upon completion of this remedy, hazardous substances will at the site above health-based levels. Thus, a statutory review of the remedy will be conducted pursuant to CERCLA Section 121(c) and provided in OSWER Directive 9355.7-02 "Structure and Components of Five-Year Reviews" (May 23, 1991) and OSWER Directive 9355.702A, "Supplemental Five-Year Review Guidance" (July 26, 1994). This review will take place on or before October 30, 2000 (five-years after first on site mobilization).

Approved by:



William E. Muno, Director
Superfund Division
U.S. EPA, Region 5



Date

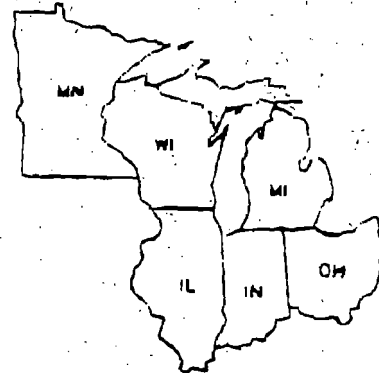


United States Environmental Protection Agency

Region V

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Superfund Division

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ZANESVILLE PCOR

Signature:

NPL CONSTRUCTION COMPLETION SITE INFORMATION

EPA ID: OH0980794593

Site Name: Lanesville Well Field

State: OH Region: 5

Congressional District: 18

Construction Completion Date: 9/3/96

Please circle appropriate Document Type Code:

Code	Description
COR	Close Out Report (COR)
DEL	Deletion
ICOR	Interim COR
LAR	Limited Action ROD
NAR	No Action ROD
NOID	Notice Of Intent To Delete
NONE	No document available
PCOR	Preliminary COR

LTRA¹: ☒ Yes ☐ No

Please circle appropriate Site Lead² Code as indicated in CERCLIS:

Code	Description
<input checked="" type="radio"/> F	Fund Financed
<input type="radio"/> FE	PRP Response under Fed.
<input type="radio"/> FF	Federal Facility
<input type="radio"/> MR	Mixed Responsible Party
<input type="radio"/> PS	PRP Response under State
<input type="radio"/> RP	Responsible Party
<input type="radio"/> S	State, fund financed
<input type="radio"/> SE	State Enforcement
<input type="radio"/> SN	State, no fund money
<input type="radio"/> SR	State & Responsible Party
<input type="radio"/> TR	Tribal Lead

Please circle appropriate Site Type(s) Code(s) as indicated in CERCLIS:

Code	Description
<input type="radio"/> A	Abandoned
<input type="radio"/> B	Chemical Plant
<input type="radio"/> C	City Contamination
<input type="radio"/> G	Groundwater
<input type="radio"/> H	Housing Area/Farm
<input type="radio"/> I	Industrial Waste
<input type="radio"/> J	Inorganic Waste
<input type="radio"/> L	Landfill
<input type="radio"/> M	Manufacturing Plant
<input type="radio"/> N	Military Related
<input type="radio"/> O	Other
<input type="radio"/> P	Lagoons
<input type="radio"/> R	Radioactive Site
<input type="radio"/> T	Mines/Tailings
<input type="radio"/> V	Waterways/Creeks/Rivers
<input checked="" type="radio"/> W	Wells

¹ Long Term Response Actions (LTRA) are undertaken for the purpose of restoring groundwater. These actions may require several years of onsite activity before cleanup levels are achieved.

² "Lead" represents the party responsible for final operable unit remedial action activities; if no remedial work was performed, "lead" represents party responsible for other actions.

Please circle appropriate Clean-up Activity/Technology Code:

On-Site Containment Code/Description

BF - Backfilling
CP - Surface Capping Only (cement, clay, low permeability cover)
CS - Surface Capping w/ slurry wall and cover
CV - Soil cover
DG - Excavation and on-site containment
EN - Encapsulation or overpacking w/ final on-site disposal
SD - Surface drainage control- dikes, berms, ditches, diversionary measures
SL - Solidification/stabilization: vitrification, immobilization, fixation
ST - Drums, staged only
SU - Slurry wall

Off-Site Containment Code/Description

DO - Excavation and final removal to off-site landfill
EC - Encapsulation or overpacking with final off-site disposal
RE - Removal to off-site locations
RM - Final removal to off-site landfill

On-Site Treatment Code/Description

AE - Soil aeration technologies
AI - Air stripping technologies
BO - Biodegradation and bioremediation treatment
DC - Dechlorination
IF - In situ flushing
IN - Incineration and on-site disposal of residual
IX - Incineration w/ off-site disposal of residual
LC - Leachate treatment
LF - Landfill gas extraction system; Venting; Gas Collection
NA - Natural attenuation
NU - pH neutralization, other neutralization methods
PO - Pump and treat, final on-site discharge or reinjection
PX - Pump and treat, final off-site discharge or reinjection
RC - Removal to off-site locations after on-site treatment
SV - Soil vapor extraction
SW - Soil washing
TD - Thermal desorption
TH - Thermal treatment w/on-site placement of residuals
TM - Thermal treatment w/off-site placement of residuals

Off-Site Treatment Codes/Description

ID - Incineration and disposal
RV - Removal for off-site treatment and disposal

Other Site Treatment Codes/Description

IC - Institutional controls
IV - Innovative technologies
NC - No clean-up necessary
RA - Referred to another authority
RR - Permanent relocation of residents
SM - Surface water monitoring
WA - Permanent water supply provided
WL - Construction of wells other than monitoring wells
WM - Groundwater monitoring

Comments:

Reviewer: _____

Date: _____